

# **Gentamicin Resistance in Human *Salmonella* and Enterococci Isolates, and Chicken Enterococci Isolates in the United States: Associated with Frequent use of Gentamicin in Chickens?**

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**Objective:** Gentamicin is used to treat serious bacterial infections in humans, including septicemia caused by *Salmonella* and enterococci. Gentamicin is also frequently used in chickens, often administered in ovo with Marek's Disease vaccine.

**Procedure:** Seventeen state and local public health laboratories select every tenth non-typhoidal *Salmonella* isolate and forward these isolates to CDC for antimicrobial susceptibility testing using Sensititre (Trek Diagnostics, Westlake, Ohio). Four collaborating laboratories used Gram positive selective media and gentamicin-resistant selective media to culture human stools and chicken purchased from grocery stores; isolates of enterococci were forwarded to CDC for species identification and antimicrobial susceptibility testing using broth microdilution.

**Results:** From 1996-1998, 161 (3.5%) of 4580 human *Salmonella* isolates were gentamicin-resistant; the highest prevalence was among serotypes commonly isolated from chickens (i.e., 18% of 289 S. Heidelberg isolates were gentamicin-resistant). High level gentamicin-resistant (HLGR) enterococci were isolated from 4 (1%) of 410 stools from outpatients and healthy volunteers, and 214 (52%) of 410 chickens purchased from 25 grocery stores in 1998-1999.

**Conclusions:** Chickens represent a major reservoir for HLGR enterococci and gentamicin-resistant *Salmonella* to which humans are commonly exposed. Continued heavy use of gentamicin in the United States poultry industry may compromise the effectiveness of gentamicin to treat humans with systemic infections. To mitigate human health consequences, gentamicin needs to be used prudently in chickens; routine in ovo injection with gentamicin, in particular, should be restricted.

## **Suggested citation:**

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